VCMA9

ARM9 CPU Module with 250 MHz

General Description

The VCMA9 is a small highly integrated and robust Versatile Computer Module. It is based on a micro-controller using the sophisticated ARM920T core and imple-ments a full set of common system peripherals. Besides these, the VCMA9 offers Ethernet, CAN and DAC. As main memory up to 128 MB SDRAM are available onboard and for storage media NAND-Flash. An expansion bus connec-tor is also provided. All the incorporated features make the single board computer extremely flexible and versatile. The VCMA9 can be used stand alone, in connection with expansion boards or as CPU module on a base board.

The VCMA9 Specialties

are among many others the extreme low power consumption (<1.5W). An AR-M920T core based solution with soldered SDRAM, NAND-Flash as mass storage device and a complete set of peripherals like 3 serial ports, USB, LCD, Ethernet, CAN and many more. An open source bootloader, LINUX & Windows® CE board support packages are available.

- Low power, high performance
- Project Starter-Kit
- Low cost solution
- Depopulated and tailored to customer requirements versions are available

These features make

the VCMA9 to the ideal solution for applications where a high quality, small size, low power, expandable Industrial Single Board Computer is needed. The VCMA9 is used in medicine, handheld devices, transportation or any other industrial application.
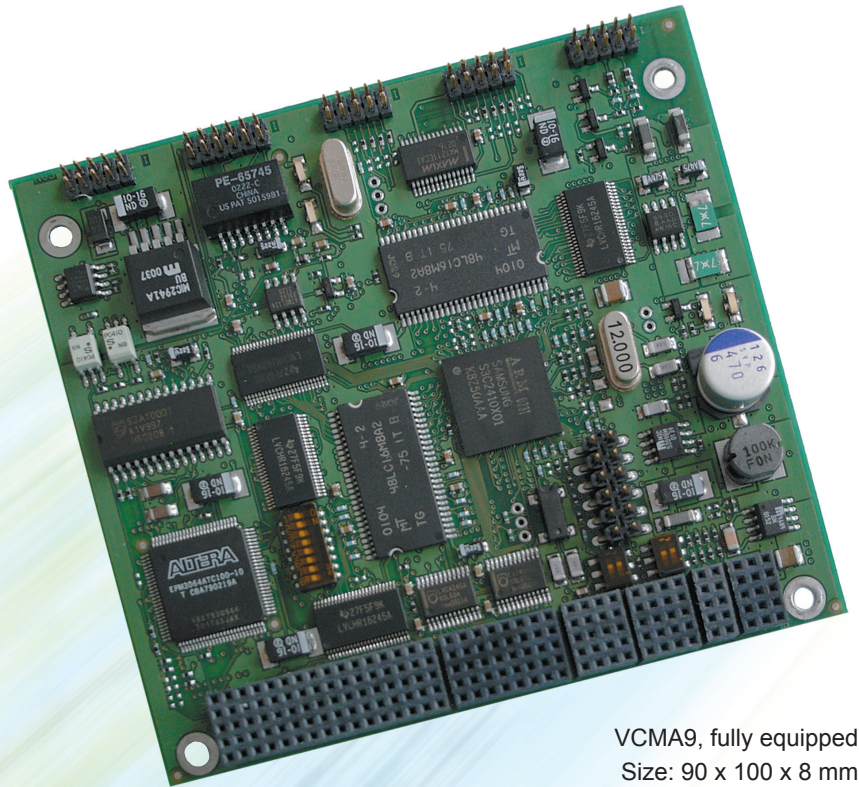
VCMA9, fully equipped
Size: 90 x 100 x 8 mm

MPL

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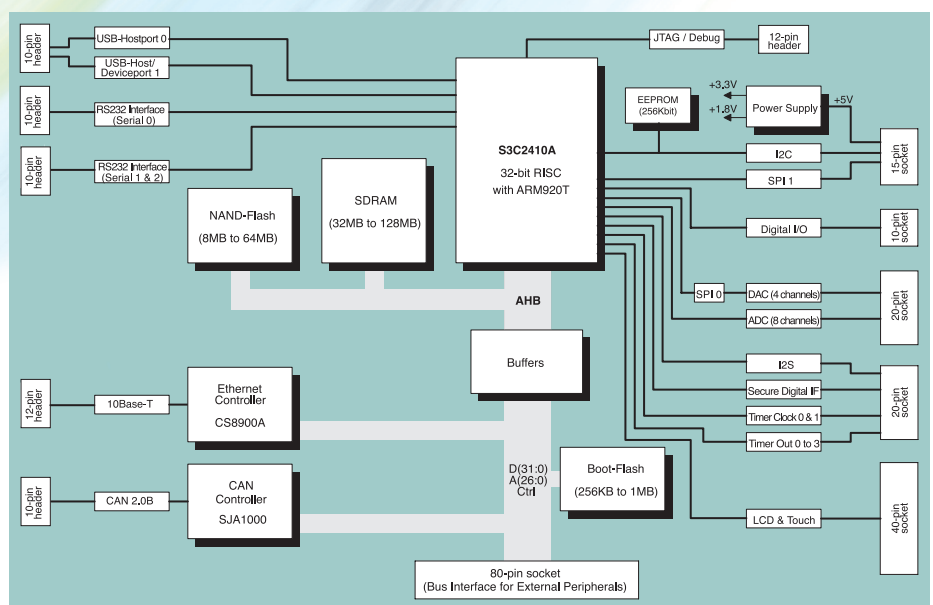
Technical Features VCMA9

Board Key Data		
Processor	32-bit ARM920T core (S3C2410A)	integrated Memory Management Unit
	Enhanced ARM architecture	separate 16 KB instruction and data cache
CPU Speed	Up to 250 MHz	adjustable
Memory	Up to 128 MB SDRAM	soldered onboard
Mass Storage	Up to 64 MB NAND-Flash	soldered onboard
Boot	512 KB Flash EEPROM	easy to update, bootloader enclosed
RTC	Alarm functions; millisecond tick for RTOS	can be backed with external battery
Ethernet	10-Base-T	10 Mbit/s
CAN	Supports CAN 2.0B protocol	opto isolated interface
Serial Line	3 ports (one with handshake signals)	RS232 level
USB	2 ports (one Host; one selectable Host or Device)	USB 1.1 ports (12 Mbit/s)
LCD	STN and TFT support	max. 24 bpp; max. 4 MB virtual screen size
	3.3V and 5 V panels	various screen sizes & resolutions are possible
Touch	Controller built in microprocessor	external transistor logic required
ADC	10-bit, 8-channel multiplexed	max. 500 ksps
DAC	8-bit, 4-channel	with high and low reference input
Digital I/O	At least 8 (up to 64 possible)	TTL-level
I2C	256 Kbit serial EEPROM onboard	up to 400 Kbit/s
SPI	2 channels built in microprocessor	DAC is controlled via SPI channel 0
I2S	Controller built in microprocessor	for audio interface with DMA-based operation
SD	Controller built in microprocessor	compatible with SD Memory/IO Card Protocol
Watchdog	Selectable timeouts	built in microprocessor
Timers	One 16-bit internal timer	DMA- or IRQ-based operation
	Four 16-bit timer	with Pulse Width Modulation (PWM)
Keyboard, Mouse, Floppy	Over USB port	Matrix Keyboard via SPI Interface
Indicators	4 activity LED's	Power, Reset, LAN-Link, LAN-Activity
Expansion	32-bit bus interface	via 80-pin 2 mm pitch socket

Physical / Power		
Size (length x width x height)	90 x 100 x 8 mm	3.545 x 3.935 x 0.315 inches
Weight	65g / 0.14 lbs	fully equipped
Power	+5VDC ±5%	Input via 2 mm pitch socket
Power consumption	typically less than 1,5 W	128 MB SDRAM, 64 MB NAND-Flash, LAN, CAN
Temperature Range	-20 °C up to 70 °C, optional -40 °C up to 85 °C	without heat sink
Humidity	5% to 95% non condensing	Optional coating available

Standard Compliance	
The VCMA9 is designed to meet or exceed the most common standards. Particular references are:	
EMC	EN 55022, EN 55024, EN 61000, MIL-STD-461E
Shock & Vibration	EN 60068
Environmental & Safety	EN 50155, MIL-STD-810-F, EN 60601, EN 60950
Approval Lists	CE, EN 60945, IACS E10

VCMA9 versions	Expansions & Options	Operating Systems
• Complete version	• Base/Carrier board available (VCMA9-BB2)	• LINUX & Windows® CE distributions
• Depopulated versions	• Over the expansion bus connector	• Open source boot loader for other OS
• Coated versions	• Customer solutions	
• Extended temp. versions		

The VCMA9 is fully developed, designed and produced by MPL AG in Switzerland.
For further requirements contact MPL.